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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,067	07/09/2003	Toshifumi Kojima	040894-5940	7994

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EXAMINER

LAM, CATHY FONG FONG

ART UNIT	PAPER NUMBER
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1775

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary**Application No.**

10/615,067

Applicant(s)

KOJIMA ET AL.

Examiner

Cathy Lam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-7 and 10-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-7 and 10-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1-25-2007</u> . | 6) <input type="checkbox"/> Other: _____ |

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In view of the amendment and remarks filed on January 03, 2007, the art rejection has been withdrawn. The claims however continue to be unpatentable as following:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 5-6, 10 and 17 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Yamamoto et al (US 6916873).

Yamamoto discloses a liquid thermosetting resin composition that is used for filling via holes and/or through holes in printed wiring boards (col 1 L 14-18).

The printed wiring boards comprise insulating layers, via holes and/or through holes, and conductive circuit patterns (col 1 L 39-45). The via holes and/or through holes are formed in the thickness of the insulating layers and plated with copper. The

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thermosetting resin composition is used to fill the via holes for providing conductive connection between the conductive circuit patterns (col 10 L 55-60 & Figs. 1(a)-1(g)).

The liquid thermosetting resin composition is comprised of (A) an epoxy resin, (B) a curing catalyst, (C) a filler and (D) a coupling agent (col 2 L 63-65 & col 3 L 6-8).

The curing catalyst (B) can be dicyandiamide (col 6 L 64 & col 7 L 17-18). The filler (C) are inorganic fillers which can either be conductive or non-conductive particles (col 8 L 10-16). Depending on the type of fillers used, the average filler size is 1-2 μm for spherical fine filler and 4-10 μm for ground filler (col 7 L 64-col 8 L 4).

The coupling agent (D) can be a silane coupling agent which comprises an urea end group (col 9 L 6-11).

The prior art is silent about the dicyandiamide is for reducing deterioration in adhesive strength between the resin composition and the conductor layer. Since Yamamoto teaches the same dicyandiamide as the present invention, it would be inherent that Yamamoto's dicyandiamide curing catalyst possesses the same function.

Claim Rejections - 35 USC § 103

3. Claims 7, 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al (US 6916873).

Yamamoto teaches the present invention but is silent about the size of the via hole or through hole, the dicyandiamide is in powder format and the specific type of urea compound used.

In view of Yamamoto's teaching, one skill in the art would choose a desired via hole size because choosing a workable size is just a matter of design choice.

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Regarding top the dicyandiamide curing agent in powders, dendrites or flakes format, since applicant has not stated any advantages of using such, the examiner is taking the position that the prior art (not mentioned about the physical format) would perform the same job.

Regarding to the specific type of urea compound, the examiner is taking the position that one skill in the art would choose the claimed urea compounds because finding a workable material involves only routine experimentations.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Cathy Lam
Primary Examiner
Art Unit 1775

cfl
March 19, 2007